

REMARKS

This Reply is being filed together with a Request for Continued Examination (RCE).

Claim Status

Claims 1-24 are pending, of which claims 19-24 are newly added. Claims 1, 14, 21, and 22 are independent claims.

Independent claims 1 and 14 have been amended to recite that the “lateral structure by means of which substantially uniform coupling of electrical current into said current-spreading layer is achieved” includes a “central contact surface that is directly deposited on said current-spreading layer.”

New independent claim 21 is similar to independent claim 1, except that rather than recite the central contact surface, it recites that the “substantially uniform coupling [achieved by the lateral structure] includes coupling of electrical current through the middle of the current spreading layer.”

New independent claim 22 recites that “the second electrical contact layer comprises discontinuous portions” and that “a layer of transparent, light-conducting material [is] deposited on the second electrical contact layer to interconnect the discontinuous portions.” Like the other independent claims, it also recites that the “second electrical contact layer compris[es] a lateral structure by means of which substantially uniform coupling of electrical current into said current-spreading layer can be achieved.”

Prior Art Rejections

Independent claims 1 and 14 stand rejected as unpatentable over the combination of Krames (U.S. Patent 5,779,924) and Nozaki (U.S. Patent 5,744,828). The Action concedes that “Krames ... fails to disclose that the second electrical contact provides substantially uniform coupling of the current into the current spreading layer, and that the second contact layer has a circumferential contact web structure.” (Action at page 3.) It purports to find such limitations in Nozaki, specifically identifying col. 2, lines 12-60 and col. 7, lines 20-30 for the substantially

uniform coupling of the current, and figures 1 and 8 for the circumferential web arranged about a central contact structure. (Action at page 3 and 6.) We traverse.

Far from teaching “substantially uniform coupling of electrical current into said current-spreading layer,” as required by claims 1 and 14, Nozaki, in fact, teaches the opposite. Specifically, Nozaki teaches the formation of a central current blocking layer 10 between bonding pad 21 and current diffusion layer 6 – “[t]he current blocking layer prevents a current from flowing under the bonding pad.” (Nozaki at col. 2, lines 45-46, emphasis added.) As emphasized in the concluding paragraph of Nozaki’s specification, the current blocking layer 10 is an essential part of Nozaki’s disclosure:

“In summary, the present invention provides a semiconductor light-emitting device having a current blocking layer formed under a bonding pad. The current blocking layer prevents a current from flowing under the bonding pad.” (Nozaki at col. 7, lines 20-23.)

The use of the current blocking layer 10 results in a non-uniform coupling of electrical current into current diffusion layer 6. Such non-uniform coupling is clearly shown in Fig. 2 of Nozaki, where current blocking layer 10 causes the dotted lines indicating current flow to be *excluded* from the middle of current diffusion layer 6. (See, Nozaki at col. 3, lines 58-62, and Fig. 2.)

Accordingly, Nozaki teaches away from “a lateral structure by means of which substantially uniform coupling of electrical current into said current-spreading layer can be achieved,” as recited in each of independent claims 1, 14, 21, or 22, and “coupling of electrical current through the middle of the current spreading layer,” as additionally recited in new independent claim 21. Accordingly, we ask the Examiner to withdraw the obviousness rejection, and allow the claims, because to modify Nozaki so as to exclude the current blocking layer (and the resulting *non-uniform* coupling of electrical current) would render the reference unsuitable for its intended purpose. MPEP § 2143.01.

Moreover, Nozaki does not teach or suggest a “central contact surface that is directly deposited on said current-spreading layer,” as recited in claims 1 and 14. To the contrary, as described above, Nozaki intentionally positions current blocking layer 10 to prevent direct contact between bonding pad 21 and current diffusion layer 6. Notably, claim 14 further requires

“lateral structure compris[ing] a central contact structure and a circumferential contact web arranged about the central contact structure.” Accordingly, we again ask the Examiner to withdraw the obviousness rejection, and allow the claims, because to modify Nozaki so as to exclude the current blocking layer would render the reference unsuitable for its intended purpose. MPEP § 2143.01.

We further submit that the cited prior art does not disclose “a layer of transparent, light-conducting material deposited on the second electrical contact layer to interconnect the discontinuous portions of the second electrical contact layer,” as recited in independent claim 22. The Action purports to find a discontinuous contact layer interconnected by a layer of transparent, light-conducting material in Shakuda (U.S. 6,107,644), pointing to layer 7 in figures 6a, 7a and 7b, and argues that it would be obvious to combine such a teaching with Nozaki and Krames. (Action at page 7.) We do not concede this point, however, it is moot because independent claim 22 recites that the “layer of transparent, light-conducting material [is] *deposited on* the second electrical contact layer to interconnect the discontinuous portions” (emphasis added.) In contrast, Shakuda shows current diffusion layer 7 *below* electrode 8 in these figures – there is no layer “deposited on” electrode 8 to interconnect its discontinuous portions. Accordingly, independent claim 22 distinguishes the cited prior art and we ask the Examiner to allow the claim.

All of the remaining claims are dependent claims. We submit that they are allowable for at least the same reasons as those set forth above for the corresponding independent claims.

Applicant : Ralph Wirth, et al.
Serial No. : 10/089,017
Filed : March 25, 2002
Page : 10 of 10

Attorney's Docket No.: 12406-
022US1 / 1999P4773USN

Conclusion

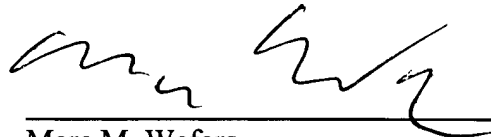
In view of the above, we ask the Examiner to allow the application.

Enclosed is a \$400.00 check for excess claim fees. The RCE is being filed under a separate cover. Please apply any other charges or credits to deposit account 06-1050, referencing Attorney Docket No. 12406-022US1.

Respectfully submitted,

Date: _____

7/12/05



Marc M. Wefers
Reg. No. 56,842

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906